

ABSTARCT

Melanoma is one type of skin disease in the form of malignant tumors that develop in melanin-producing melanocyte cells. This disease is a rare disease, but has a high risk of death if not treated immediately. One of the things that can help treat melanoma is early diagnosis of the disease.

In this study, melanoma detection based on deep learning is designed using microcontrollers and pi camera by implementing the Grey Level Co-Occurance Matrix (GLCM) extraction method and the Convolutional Neural Network (CNN) classification method used to identify melanoma skin diseases. The image obtained will be processed through the pre-processing process in the form of cropping, image adjustment, and changing the color of the image to grayscale. Then, the image will be extracted using the GLCM method based on contrast, correlation, entropy, and uniformity parameters. The final stage, namely the image will be identified whether including melanoma or non-melanoma using the CNN method.

Testing data was carried out using validation data that was captured directly from the tool, totaling 16 samples of image data. From the test results, the GLCM matrix results from several validation data are obtained. Meanwhile, the accuracy value of the system is 83.65 % on average.

Keywords: *Convolutional Neural Network (CNN), Grey Level Co-Occurance Matrix (GLCM), Melanoma, Deep Learning, Image Processing.*